UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/813,873	07/30/2015	ILIAS LEVIS	PAT903767-US-CNT	9737

26356 7590 02/04/2019

ALCON
IP LEGAL
6201 SOUTH FREEWAY
FORT WORTH, TX 76134

EXAMINER
WILKES, ZACHARY W

ART UNIT	PAPER NUMBER
2872	

NOTIFICATION DATE	DELIVERY MODE
02/04/2019	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patent.docketing@alcon.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ILIAS LEVIS, KATARIINA LAHTI, and BORIS NALIBOTSKI

Appeal 2018-002832
Application 14/813,873
Technology Center 2800

Before JEFFREY T. SMITH, GEORGIANNA W. BRADEN, and JANE E. INGLESE, *Administrative Patent Judges.*

INGLESE, *Administrative Patent Judge.*

DECISION ON APPEAL

Appellant[1] requests our review under 35 U.S.C. § 134(a) of the Examiner's decision to finally reject claims 24–38. We have jurisdiction over this appeal under 35 U.S.C. § 6(b).

We REVERSE.

STATEMENT OF THE CASE

Appellant's invention is generally directed to a method and system for generating a radial alignment guide for an eye that improves toric intraocular

---

[1] Appellant is the applicant, Alcon Research, Ltd., which, according to the Appeal Brief, is the real party in interest. Appeal Brief filed August 7, 2017 ("Br."), 2.

lens alignment during cataract surgery. Spec. 2, ll. 17–30; 3, ll. 18–20. Independent claims 24 and 29 illustrate the subject matter on appeal and are reproduced below with emphasis added to highlight contested language:

> 24. A method for generating a radial alignment guide, comprising:
>
> *collecting preoperative data from a patient's eye while the patient is in a seated position, the preoperative data comprising*:
>
> preoperative rotational alignment data for a toric intraocular lens (IOL), the preoperative rotational alignment data comprising a rotational offset relative to a meridian of the patient's eye;
>
> *locations of one or more anatomical features on the patient's eye*, the locations of the one or more anatomical features being determined based on a preoperative image of the patient's eye;
>
> generating an intraoperative image of the patient's eye while the patient is in a supine position;
>
> *aligning an axis of an intraoperative radial grid with the meridian of the patient's eye based at least in part of the locations of the one or more anatomical features on the patient's eye*; and
>
> displaying a rotational alignment axis for the toric IOL on the intraoperative image of the patient's eye, the rotational alignment axis being offset relative to the axis of the intraoperative radial grid by an amount equal to the rotational offset of the preoperative rotational alignment data.
>
> 29. A system for generating a radial alignment guide, comprising:
>
> *a memory operable to store preoperative data from a patient's eye*, the preoperative data being collected while the patient is in a seated position, the preoperative data comprising:
>
> preoperative rotational alignment data for a toric intraocular lens (IOL), the preoperative rotational alignment data comprising a rotational offset relative to a meridian of the patient's eye;

> *locations of one or more anatomical features on the patient's eye*, the locations of the one or more anatomical features being determined based on a preoperative image of the patient's eye;
>
> an imaging device operable to generate an intraoperative image of the patient's eye while the patient is in a supine position;
>
> *a processor operable to align an axis of an intraoperative radial grid with the meridian of the patient's eye based at least in part of the locations of the one or more anatomical features on the patient's eye*; and
>
> a display device operable to display a rotational alignment axis for the toric IOL on the intraoperative image of the patient's eye, the rotational alignment axis being offset relative to the axis of the intraoperative radial grid by an amount equal to the rotational offset of the preoperative rotational alignment data.

App. Br. 13–14 (Claims Appendix) (emphasis and indentations added).

The Examiner sets forth the rejection of claims 24–38 under 35 U.S.C. § 102(a)(1) as unpatentable over Moeller et al. (US 2006/0247659 Al, published November 2, 2006) in the Final Office Action entered February 17, 2017 ("Final Act."), and maintains the rejection in the Examiner's Answer entered November 13, 2017 ("Ans.").

DISCUSSION

Upon consideration of the evidence relied upon in this appeal and each of Appellant's contentions, we reverse the Examiner's rejection of claims 24–38 under 35 U.S.C. § 102(a)(1) for the reasons set forth in the Appeal Brief and below.

Priority Determination

Although Appellant presents arguments in the Appeal Brief disputing the Examiner's determination that Appellant's claim of priority to parent application serial number 12/705,799 is invalid because the Specification of the parent application does not provide written description support for certain claimed subject matter (Br. 7–10), the Examiner makes clear in the Answer that the denial of priority "is not a rejection." Ans. 2. This matter is, therefore, not before us, and we do not address it. 37 C.F.R. § 41.31(a)(1).

Rejection under § 102(a)(1)

The method of claim 24 requires, in part, collecting preoperative data from a patient's eye that includes locations of one or more anatomical features on the patient's eye, and aligning an axis of an intraoperative radial grid with the meridian of the patient's eye based at least in part on the locations of the one or more anatomical features on the patient's eye. Similarly, the system of claim 29 comprises, in part, a memory operable to store preoperative data from a patient's eye that includes locations of one or more anatomical features on the patient's eye, and a processor operable to align an axis of an intraoperative radial grid with the meridian of the patient's eye based at least in part on the locations of the one or more anatomical features on the patient's eye.

The Examiner finds that Appellant's Specification indicates that "an intraoperative radial grid may include a circle and horizontal/vertical meridians and a scale at any suitable accuracy," and the Examiner finds that circle 141 disclosed in Moeller therefore corresponds to the radial grid recited in claims 24 and 29. Ans. 3 (citing Spec. 4, ll. 1–2). The Examiner

finds that "[a]s is discussed in Appellant's disclosure, an anatomical feature can be blood vessels, iris features, or any other appropriate fiducials." Ans. 3 (citing Spec. 4, ll. 4–5). The Examiner finds that Moeller's iris edges (111, 107), pupil center (115), vertical meridian of the eye (151), and mark (149) each "qualify as an 'anatomical feature' as is consistent with Appellant's specification." Ans. 3, 5 (citing Spec. 4, ll. 4–5). The Examiner finds that "Moeller teaches aligning the intraoperative radial grid based on the following anatomical features: iris edges (111, 107), pupil center (115), vertical meridian of the eye (151), mark (149)." Ans. 5 (citing Moeller ¶¶ 48, 50, Figs. 5 and 7).

The Examiner, however, does not provide a sufficient factual basis to establish that Moeller discloses collecting preoperative data from a patient's eye that includes locations of one or more anatomical features on the patient's eye, and aligning an axis of an intraoperative radial grid with a meridian of the patient's eye based at least in part on the locations of the one or more anatomical features on the patient's eye, as recited in claim 24, and a memory operable to store preoperative data from a patient's eye that includes locations of one or more anatomical features on the patient's eye, and a processor operable to align an axis of an intraoperative radial grid with a meridian of the patient's eye based at least in part on the locations of the one or more anatomical features on the patient's eye, as recited in claim 29, for reasons expressed by Appellant and discussed below.

Moeller discloses a method of preparing for implantation of a toric intra-ocular lens in an eye comprising generating a microscopic image of the eye, generating a pattern superimposed with the microscopic image that includes a first partial pattern extending along a ring and a second partial

pattern extending along a straight line, and adjusting the orientation of the second partial pattern (straight line). Moeller ¶¶ 20, 22, and 25. Moeller discloses adjusting the orientation of the second partial pattern (the straight line) by changing the orientation of the line to coincide with a mark applied to the patient's eye before beginning the treatment. *Id.* ¶ 26. Moeller discloses that the mark may represent a predetermined orientation, such as vertical orientation, and constitutes a reference for an orientation of the toric intra-ocular lens. *Id.*

Moeller discloses (¶¶ 47–49) a method that includes the following steps: First, Moeller discloses attaching mark 149 to an eye before treatment "using a suitable tool, such as color pen or other instrument." *Id.* ¶ 49, Fig. 5. Moeller discloses that "mark 149 is oriented in accordance with a predetermined angle α with respect to a vertical reference 151 or a horizontal reference which has been marked before the treatment." *Id.* Moeller further discloses producing circular line 141 and straight line 143 with pattern generator 64, and superimposing circular line 141 and straight line 143 on microscopic image 101 of the eye. *Id.* ¶¶ 48, 49, Fig. 6. Moeller discloses that the diameter of circular line 141 is selected to be between a diameter of the inner rim 111, and a diameter of the outer rim 107, of the iris. *Id.* ¶ 48, Fig. 7. Moeller discloses that the correct positioning of circular line 141 occurs when the center of circular line 141 "coincides with the centre 115 of the pupil." *Id.* ¶ 48. Moeller also discloses adjusting the orientation of straight line 143 "such that the straight line 143 is registered with the mark 149 attached to the eye." *Id.* ¶ 49, Fig. 7.

Contrary to the Examiner's assertions, circular line 141 disclosed in Moeller does not correspond to the intraoperative radial grid recited in

claims 24 and 29. We first point out that the Examiner mischaracterizes disclosures in Appellant's Specification to support the Examiner's interpretation of "intraoperative radial grid." Although the Examiner asserts that the Specification discloses that "an intraoperative radial grid may include a circle and horizontal/vertical meridians and a scale at any suitable accuracy" (Ans. 3), the Specification does not indicate that an "intraoperative radial grid" may include a circle. Rather, the portion of the Specification cited by the Examiner states that "[t]he grid may include vertical and horizontal meridians and a scale at any suitable degree of accuracy." Spec. 4, ll. 1–2.

In addition, circular line 141 disclosed in Moeller is not a "radial grid" according to the plain meaning of "radial," which is "characterized by divergence from a center." *See, e.g.* https://www.merriam-webster.com/dictionary/radial/. Thus, a grid is "radial" if the lines of the grid diverge from a center. Consistent with this definition, Appellant's Figure 1 illustrates a radial grid in which lines diverge from a center point in the grid, which corresponds to the center of the pupil. Circular line 141 disclosed in Moeller does not diverge from a center of the eye, and does not radiate from the center of the pupil like the radial grid of Appellant's Figure 1. Rather, as Moeller illustrates and explicitly discloses, circular line 141 circumscribes the center of the pupil. Moeller ¶ 48, Figs. 6 and 7. Thus, circular line 141 disclosed in Moeller does not correspond to the intraoperative radial grid recited in claims 24 and 29 as the Examiner asserts.

We also point out that Examiner mischaracterizes disclosures in Appellant's Specification to support the Examiner's interpretation of "anatomical features." Although the Examiner asserts that "[a]s is discussed

in Appellant's disclosure, an anatomical feature can be blood vessels, iris features, or any other appropriate fiducials" (Ans. 3), the Specification does not indicate that "anatomical features' include "other appropriate fiducials." Rather, the Specification states that "angular measurements may be selected and marked on the grid to various features of the eye such as blood vessels, iris features, or any other appropriate fiducials." Spec. 4, ll. 3–5. Thus, the portion of the Specification cited by the Examiner does not provide a definition of "anatomical features," but instead indicates that angular measurements may be marked on the grid based on blood vessels and iris features—which are anatomical features[2]—**or** any **other** appropriate fiducials. The Specification thus differentiates between blood vessels and iris features (anatomical features) and "other appropriate fiducials," and the Examiner's interpretation of "anatomical features" as including "any other appropriate fiducials" is inconsistent with this disclosure, and is therefore unduly broad and unreasonable. *In re Morris*, 127 F.3d 1048, 1054–55 (Fed. Cir. 1997) ("While the Board must give the terms their broadest reasonable construction, the construction cannot be divorced from the specification and the record evidence."); *In re Baker Hughes, Inc.*, 215 F.3d 1297, 1303 (Fed. Cir. 2000) (the PTO cannot adopt a construction that is "beyond that which was reasonable in light of the totality of the written description" in the Specification).

In addition, although the Examiner asserts that "Moeller teaches aligning the intraoperative radial grid based on the following anatomical features: iris edges (111, 107), pupil center (115), vertical meridian of the

---

[2] *See, e.g.*, https://www.collinsdictionary.com/us/dictionary/english/anatomical.

eye (151), mark (149)" (Ans. 5), as discussed above, circular line 141 does not constitute an intraoperative radial grid as recited in claims 24 and 29. Accordingly, although Moeller discloses that the diameter of circular line 141 is selected to be between a diameter of inner rim 111, and a diameter of outer rim 107, of the iris, and is centered on pupil center 115, because circular line 141 is not an "intraoperative radial grid" as recited in claims 24 and 29, this disclosure does not correspond to "aligning an axis of an intraoperative radial grid with the meridian of the patient's eye based at least in part of the locations of the one or more anatomical features on the patient's eye."

Moreover, vertical reference 151 disclosed in Moeller, which the Examiner refers to as "vertical meridian of the eye (151)" is not an anatomical feature according to the plain meaning of this term, which is "relating to the structure of the bodies of people and animals." *See e.g.*, https://www.collinsdictionary.com/us/dictionary/english/anatomical. Vertical reference 151 is a construct created during preparation for surgery to orient the position of mark 149, and is not part of the actual structure of an eye; consequently, vertical reference 151 is not an "anatomical feature."

As Appellant points out (Br. 11), mark 149 is also not an "anatomical feature" because mark 149 is applied to the eye using a color pen or other instrument in preparation for surgery, and is, therefore, not part of the actual structure of the eye. The Examiner asserts that even if mark 149 itself is not an "anatomical feature," the location of mark 149 is based on the anatomical features of vertical meridian of the eye 151 and edge of iris 107. Ans. 6. As discussed above, however, vertical reference 151 is not an "anatomical feature." Furthermore, Examiner does not identify any disclosure in Moeller

indicating that the location of mark 149 is based on edge of iris 107. Rather, as discussed above, Moeller discloses that "mark 149 is oriented in accordance with a predetermined angle α with respect to a vertical reference 151 or a horizontal reference which has been marked before the treatment." Moeller ¶ 49, Fig. 5.

Accordingly, on this appeal record, the Examiner does not provide a sufficient factual basis to establish that Moeller discloses aligning an axis of an intraoperative radial grid with a meridian of the patient's eye based at least in part on the locations of the one or more anatomical features on the patient's eye, as required by claims 24 and 29. We accordingly do not sustain the Examiner's rejection of claims 24 and 29 under 35 U.S.C. § 102(a)(1), and also of claims 25–28 and 30–38, which depend from either claim 24 or claim 29.

DECISION

We reverse the Examiner's rejection of claims 24–38 under 35 U.S.C. § 102(a)(1).

REVERSED